REMARKS

This amendment is submitted in an earnest effort to bring this application to issue without delay.

Applicant wishes to reiterate his claim to the benefit of his German priority date of 31 May 2002 pursuant to the International Convention. A certified copy of German Patent Application 102 24 534.7 filed 31 May 2002 has been made of record as part of Applicant's PCT/EP03/05710 filed 30 May 2003 of which then instant application is the US national Phase. The Examiner has already acknowledged Applicant's perfected right of priority.

Applicants have canceled claims 8 through 11 withdrawn from further consideration as directed to a non-elected invention. Applicant reserves the right to claim the subject matter in the canceled claims in a related application. Thus claims 12 and 13 remain in this application and are again presented for examination.

The Examiner has rejected claim 13 under 35 USC 112, second paragraph, arguing that the claim is indefinite. Applicant has responded to the rejection by amending line 10 to change "the presence" to "any presence" and by amending step (c) to read as follows:

(c) relating any presence of at least one HERG potassium channel in the biopsy or sample as indicating that colorectal carcinoma is present in the patient.

Thus if any presence of the HERG potassium channel is not detected, this indicates that colorectal cancer is not present in the patient. Accordingly claim 13 complies fully with the requirements of 35 USC 112, second paragraph.

The Examiner has not found a reference that anticipates claims 12 and 13. However, the Examiner has found three references which he has applied in combination to support the position that the claims include obvious subject matter. The Examiner has cited the same WANG et al reference that he cited in the previous office action to show that compound E-4031 can blockade the HERG α-subunit of the voltage-gated potassium ion channel. There is no disclosure in WANG et al, however, of either detecting the HERG in patients to indicate the presence of colorectal carcinoma or of blocking an HERG α-subunit of the voltage-gated potassium ion channel to treat colorectal carcinoma. The Examiner has also applied two additional references.. One reference is US Patent 6,071,720 to HILLMAN et al. The Examiner admits that HILLMAN et al does not disclose blockading an HERG potassium ion channel to treat colorectal cancer, but argues that the reference discloses a new voltage-gated potassium ion channel subunit (DRCPS) similar in properties to HERG that may be antagonized to facilitate the treatment of cancer. Here the Examiner cites col. 2, lines 7 to 14, and 55 to 60 and col. 19, lines 12 to 25 of HILLMAN et al to support his position. Col. 19 mentions the use of DRCPS antagonists to treat a number of cancers, including adenocarcinoma. The Examiner concludes from HILLMAN et al

that it would be obvious to administer E-4031 to block an HERG α-subunit of the voltage-gated potassium ion channel to treat colorectal carcinoma in a patient suffering from colorectal cancer to effectively treat the disease.

Applicant does not agree with the Examiner's interpretation of HILLMAN et al. Applicant does not agree that the novel voltage-gated potassium ion channel subunit (DRCPS) disclosed in HILLMAN et al is similar to the HERG α-subunit of the voltage-gated potassium ion channel, either in terms of structure or in terms of activity, and so the Examiner's application of HILLMAN et al in combination with WANG is improper. The HERG α subunit activates and deactivates rapidly whereas DRCPS is a β subunit of the voltage-gated potassium ion channel and activates and deactivates slowly. Therefore even though col. 19 of HILLMAN et al discloses that DRCPS is expressed in cancerous tissues and that an antagonist of DRCPS may be administered to a cancer patient with the DRCPS potassium ion channel to treat the cancer, such a disclosure is not at all suggestive of the present invention because there is no showing of an expected equivalence between HERG and DRCPS. In addition the antagonists disclosed in HILLMAN of the DRCPS potassium ion channel in no way resemble E-4031 or any other small molecule. The antagonists for the DRCPS disclosed in the reference include antibodies and fragments thereof. See col. 20, lines 17 through 28 of the reference. Thus the combination of WANG

et a and HILLMAN et al falls short of providing a basis for the obviousness of the present claims.

The Examiner has also found BIANCHI et al. The Examiner argues that HERG α subunits of voltage-gated potassium ion channels and a number of types of cancer cells, including neuroblastoma cells, have similar rectifier currents (designated I_{HERG} and has cited the abstract and page 815, right-hand column of the reference, to support his position. According to page 815, right hand column, third paragraph, the prior art available at the time of the BIANCHI et al work shows that the rectifier currents of both the known HERG α subunits of voltage-gated potassium ion channels and the HERG- like rectifier currents expressed in neuroblastoma cells as well as in non-nervous tumors across several species were effectively blocked by compound E4031. BIANCHI et al in the next several paragraphs then goes on to state that other tumors besides neuroblastomas also express the same current and carried out experiments in which probes for the HERG α subunit were used to determine the presence of same in a number of tumors, including mammary adenocarcinoma. See page 817, Fig. 1 and the right-hand column.

Applicant does note, however, that there is no mention in BIANCHI et al specifically that colorectal carcinoma cells contain the HERG α subunits of voltage-gated potassium ion channels, nor is there any mention or suggestion that blockading

the HERG α subunits of voltage-gated potassium ion channels present in any tumor with Compound E-4031 may be employed as a way to treat the tumor. There is no disclosure or suggestion of administering E-4031 to a patient suffering from colorectal carcinoma to treat the disease. Thus the presently claimed invention is patentably distinguishable over BIANCHI et al per se or the combination of BIANCHI et al together with HILLMAN et al and WANG et al. Accordingly no rejection of the claims now presented should be maintained under 35 USC 103 in view of this combination of references.

Applicants believes that claims 12 and 13 as now presented are in condition for allowance and a response to that

effect is earnestly solicited.

Respectfully submitted,
K.F. Ross P.C.

By: Jonathan Myers, 26,963
Attorney for Applicant

21 December 2007
5683 Riverdale Avenue Box 900
Bronx, NY 10471-0900
Cust. No.: 535
Tel: 718 884-6600
Fax: 718 601-1099
Email: email@kfrpc.com

Enclosure:

None.